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THE STEADILY APPRECIATING STANDARD.

In recent numbers of the *Political Science Quarterly** Professor J. B. Clark has advanced a new theory concerning the influence of changes in the value of money. Since the days of Hume the view has been more or less widely entertained that any but a stable standard of values causes injury. It has been maintained, further, that, of the two variations, appreciating money has depressing effects upon industry and enterprise, while depreciating money, on the contrary, brings a stimulus. Now, it is admitted that a currency has these effects when it is beginning to appreciate or to depreciate, and hence that a fluctuating currency is apt to exert the one or the other of these influences. But the view is advanced by Professor Clark that, when the appreciation or the depreciation is steady and constant, business soon adapts itself to either of these conditions, counteracting its effects by an adjustment of the rate of interest. For, if money is appreciating 1 or 2 per cent. annually, a retraction of about 1 or 2 per cent. in the money interest from the normal rate of interest measured in commodities is conceived as restoring the normal relationship between borrower and lender; and similarly, if money is depreciating, an equal addition to the money interest would preserve the same relationship. And it is maintained that, in this way, a steady change in the value of money will, after a while, be forestalled by lenders and borrowers, if not advertently, yet because profits, reckoned in money, are affected, so that the adaptive change in the money interest will come about naturally in the ordinary course of business. Therefore, the "sweeping claim" is made that "not by one iota can such a slow and steady movement [in the value of money], in itself alone, rob the borrowing class," and that even a steadily appreciating standard, provided the change be not too great (a yearly appreciation of 3 per cent. is not feared), is "almost" as "ideally good" as an absolutely stable standard, and under it "justice will be done and business will thrive" equally well.[*]

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*September, 1895, June and September, 1896. In referring to these articles hereafter, I shall simply mention the dates.

This theory is offered as a contribution to the discussion about our monetary system, in defence of the gold standard, which is admitted to be appreciating; and attention is drawn only to the case of appreciation. But the theory, if correct, is of universal and abiding importance. It therefore eminently deserves serious examination.

Professor Clark confines his illustrations of the theory to a supposed case where the normal rate of commodity interest is 5 per cent. and the steady appreciation of the monetary standard 1 per cent. annually. We may do the same. And, of course, in order to eliminate conflicting causes, the supposition is always to be entertained that the country is in a stationary condition; that is, that the average natural yield to invested capital remains constant, and thus the normal rate of commodity interest at least ought to be unchanged. We shall take the dollar for the money unit, and in all cases regard the commodity unit as being the equivalent of the dollar at the commencement of a loan. In the theory, and consequently in our examination of it, there are two distinct departments. The one is the consideration whether the restorative can be made by a change in the interest merely. This is a mathematical question. The other is the economic question whether such restorative is likely to be effective in practice.

First to be considered is the simplest case, which is that of a loan for one year (viewed as the interest-paying interval). If money appreciates 1 per cent. in the course of the year, and the proper commodity interest is 5 per cent., it is apparent that a contract to pay 4 per cent. (commodity) interest[†] and to repay the same money principal at the end of the year, when it is worth 1 per cent. more than at the beginning, is virtually a contract to pay one hundred and five commodity units at the end of the year, or the principal *plus* 5 per cent.[‡]

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[*] June, 1896, pp. 251, 250, 258.

[†] The money interest would be 3.960396 per cent., to which a sufficient approximation is 3.96 per cent.

[‡] June, 1896, pp. 253, 254, 256.

Under a stable standard the borrower of $100 might make either of these two contracts indifferently: (1) to repay at the end of the year $5 as interest and $100 as principal, total, $105; or (2) to repay at the end of the year $4 as interest and $101 as principal, total, $105. The difference would be only nominal. Now the contract, under the standard appreciating 1 per cent. a year, to repay at the end of the year $3.96 as interest and $100 as principal (the former having acquired the purchasing power of four and the latter of one hundred and one of the original dollars) is exactly like the second of the above contracts under the stable standard, and therefore it is also like the first.

The case is not so simple when the loan is contracted for more than one year. A loan of a hundred commodity units paying 4 per cent. (commodity) interest for ten years, at the end of which the principal repaid is worth 10 per cent. more than it was at the beginning, is really repaid with a total of one hundred and fifty commodity units; and it is said that this is the same as a 5 per cent. loan under a stable standard, which also is repaid with a total of one hundred and fifty commodity units.* Under the stable standard contracts can be made in either of these two ways: (1) the borrower of $100 agrees to pay $5 at the end of every year as interest and at the end of ten years to repay $100 as principal, total, $150; or (2) he agrees to pay at the end of every year $4 as interest, and at the end of ten years to repay $110 as principal, total $150. It would seem that the theory under discussion assimilated the 4 per cent. loan under the steadily appreciating standard to the second of these loans under the stable standard, and thereby also to the first. But there are two reasons why this cannot be done. In the first place, under the appreciating standard, a loan paying 4 per cent. commodity interest every year is impossible when made in an ordinary money contract. The contract demanded by the theory is to pay 3.96 per cent. money interest. This, to be sure, at the end of the first year is a 4 per cent. commodity interest; but, at the end of the second and subsequent years, it is a gradually larger and larger commodity interest,—in fact, the total repayment of such a loan would purchase (when received) nearly one hundred and fifty-three and a third commodity units.* And, in the second place, even if this loan, made under the appreciating standard, were like the second of the above loans under the stable standard, it would not be like the first, which is the normal one; for the second is not in this case only nominally, but is really different from the first. In the second the creditor is out of his money longer, and thus the "present value" of the two loans is different.

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* September, 1895, p. 392.

It is to be noticed, however, that under the stable standard the second form of the loan would be like the first, so far as the borrower is concerned, if he simply laid aside one dollar every year. But he is a gainer if he puts this one dollar every year into his business, or out at interest, along with its fruits (gaining more than three and a half dollars on the loan supposed). On the other hand, the loan under the appreciating standard is, in a way, to the borrower's loss, as he has to pay back more commodity units. It might be, then, that these two gains and losses cancel each other. It might happen that if the borrower put into his business, or out at interest, the 1 per cent. commodity interest which is left in his hands at the end of the first year, and whatever commodity amount is so left to him at the end of every subsequent year, representing the reduction in his interest, he might counteract the loss by the product of this saving. That such is the case can easily be shown by the analysis on the following page of a loan of one hundred dollars, pursued to the end of the fifth year.

Thus, theoretically, the correction takes place. The debtor neither loses nor gains †; and likewise, therefore, the creditor neither gains nor loses.

It is easy to explain this result by saying that a result already reached for a short loan must be found true in a long loan, because a long loan may be viewed as a short loan

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* The longer the period, the more rapidly the difference grows. A loan of $100 at 5 per cent. for a hundred years is repaid with a total of $600; but, under the steadily appreciating standard, at only 3.96 per cent. it is repaid with a total of 956 commodity units.

† If the calculation were worked out more exactly, a gain of a very small fraction would be left to the borrower. This is due to the fact that the interest, 3.96 per cent., is by a very small fraction too small.

End of the year.	Capital has yielded commodity units.*	Total commodity units on hand.	Value of the commodity unit, in dollars.	Value of the total, in dollars.	Payment of interest, in dollars.	Capital remaining, in dollars.	Capital remaining, in commodity units.
First	5	105	.9901	103.96	3.96	100	101
Second	5.05	106.05	.9803	103.96	3.96	100	102.01
Third	5.1005	107.1105	.9706	103.96	3.96	100	103.03
Fourth	5.1515	108.1815	.9610	103.96	3.96	100	104.06
Fifth	5.203	109.263	.9515	103.96	3.96	100	105.10

renewed every year. But this explanation is not satisfactory. To understand the matter we need to pay strict attention to what takes place in such a loan as above analyzed, and to the conditions under which the desired result is reached. The following remarks suggest themselves.

(1) Under the steadily appreciating standard the long loan at reduced money interest is *not* like either of those long loans under the stable standard offered for analogy. It is not like the first, because, as we have seen, it requires a larger payment in commodities; and it is not like the second, we now see, because, to protect himself from loss, the borrower must not merely lay aside every year what is saved to him in the reduced interest, but he must either put this into his own business or lend it out at the same rate of interest.

(2) It is *not* a mere renewal every year of a one-year loan. It is a renewal at the end of the first year of the original loan (regarded as a one-year loan) *plus* what has been saved through the reduced money interest, and at the end of the second year of this new loan *plus* the new saving, and so on.

(3) If the borrower puts the savings into his business, the volume of his business increases every year,—on the same money capital, but on enlarging commodity capital. If he

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*Of course the capital yields more than this, for it yields profit to the borrower in payment for his labor. But it yields 5 per cent. in commodity, according to the hypothesis, for the purpose of paying interest.

puts it out at interest, the volume of his business remains the same,— on diminishing money capital, but on the same commodity capital; and he has, beside his business, in investments, a new sort of sinking fund. This is not a sinking fund for paying off the original (commodity) loan. It is a sinking fund to prevent the original loan from becoming larger (in commodity).* If the former course be pursued, the volume of his business, so far as it is operated on the borrowed capital, grows larger every year at exactly the same rate as the money unit appreciates, which, by compounding, is at a rapidly accelerating pace. If the latter, the sinking fund grows larger every year at the rate at which the increased volume of the business would have been valued in the new money,— a diminishing rate, the total never reaching the original money capital, but always remaining distant from it by the present money value of the commodity units originally borrowed.†

(4) It is a condition of the debtor's solvency that he makes this saving of an increasing commodity and decreasing money amount every year, and either adds it to his business or places it in a sinking fund. Under the stable standard a reduction of money interest is a reduction of commodity interest, and accrues to the borrower's benefit, and can be appropriated by him as part of his profits. Under the steadily appreciating standard this reduction of money interest does not represent a reduction of the commodity interest, and must not be mistaken for such by the borrower, or he does so at his peril.

(5) Thus, while the debtor is ever driven to add to his business or to the peculiar sinking fund, so the creditor is every year losing so much of his interest on his virtual loan and is having it added to his investment,— that is, to the commodity value of his stationary money investment; he is compelled to save and to accumulate. If the loan be a very long one,

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* This sinking fund would, no doubt, in practice, be merged with the ordinary sinking fund for paying off the loan; but it is distinct in nature, having no existence under the stable standard.

† *E.g.* at the end of the 5th, 10th, 20th, 40th, 80th, 100th, 200th years the volume of business will have grown 5.1, 10.46, 22.02, 48.89, 121.67, 170.44, 631.37 in percentages of the original business (on the borrowed capital); or the sinking fund will have grown 4.85, 9.47, 18.03, 32.83, 54.88, 63.01, 86.31 in percentages of the original money loan.

there comes a time (in the case used for illustration about the twenty-fourth year) when the reduced interest on the loan, rising in commodity value, equals in purchasing power the normal commodity interest on the original loan, and thereafter ever grows greater, so that the creditor ultimately gains enormously, but at the expense of an originally absolute and ever real economy.*

(6) The preceding considerations, under the supposition that the debtor can observe the conditions imposed upon him (the creditor, by the hypothesis, *must* observe them), show the justice of the ever-increasing and rapidly accelerating value of the interest annually paid and of the enhanced value of the principal returned at the end of the period. It is because the loan has really itself been increasing every year, in commodity; and it is not the original loan, but ever growing (commodity) loans that are being paid for.

It is evident after this analysis that there is a great difference between a long loan paying 3.96 per cent. money interest under the 1 per cent. appreciating standard and a long loan paying 5 per cent. interest both in money and in commodity under the stable standard. This is a simple mathematical difference, about which there can be no dispute. Let us now examine what effect this difference in the nature of loans would have upon business in actual practice. It is admitted that mathematically it is conceivably possible for the debtor to avoid suffering provided he pursues a line of conduct not demanded of him under the stable standard, and provided also the creditor will submit to a course of saving not demanded of him under the stable standard. Here are two provisos of great importance, which, apparently, have not received sufficient attention.

At first sight it might be thought that, contrary to the usual view, an appreciating standard would be conducive to progress, as it demands economy and accumulation on the part of creditors and extension of business on the part of debtors. But it does so only on the supposition that the theory will actually work in practice. The question is, What likelihood is there that debtors and creditors will behave as the theory requires of them? This question is composed of two questions:

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* The same result is obtained for the creditor if he invests his money in shorter loans, say five-year mortgages, and upon their settlement reinvests the same sum.

(1) Will the long-time debtor always satisfy the condition he is subjected to of increasing his business or his depreciation-meeting sinking fund? Here a difference may be discovered between business men.

If a person, though borrowing for a long period, employs the loan for circulating capital, which is "turned over" every year or even more quickly, he will no doubt go through the process of inventorying his stock every year or so, as described by Professor Clark,* and he will always try to keep in his business the capital borrowed intact in money, which he can do only by carrying every year a larger stock (which is permitted him by the reduced interest); and this he can do the more readily because the increase of his capital is of the same nature as his capital itself. But, as a rule, such a person, a merchant, does not make long loans, there being no need of his doing so. He borrows from year to year or from season to season; and, if he does not care to increase the volume of his business or has not facilities for so doing, he needs to borrow less and less money every year. He escapes the need of increasing his business or of forming a peculiar sinking fund.

But, if a person borrows for fixed capital, he must borrow for a term of years, and thus during that period he cannot escape that need. If a factory is built, which we may suppose is from the beginning running at full capacity, so that its commodity product cannot be increased, the borrower must add every year to its equipment or take up some additional line of business or form the sinking fund aforesaid (in addition to the sinking fund against the wearing out of the machinery, which the stable standard also requires). If it be a railroad, which we suppose may be earning the normal 5 per cent. commodity interest rate, it must every year either add to its length, or improve its condition in a profitable manner, or save up this kind of sinking fund. In such cases the borrower for fixed capital suffers, compared with the merchant, because the increase of his capital saved by the reduced interest is of a different nature from his capital itself, and cannot always be directly used as capital in his business, but requires a distinct effort to invest it. He is at a disadvantage also in another way. When he comes to make his annual inventory, he does not know the current money value of his land and building and machinery so well as the merchant knows the current money value of his stock. He is inclined to keep them on his balance sheet at about the same figures as at first, until after several years the difference becomes noticeable in the rates at which land is sold in the neighborhood and at which new buildings can be erected and new machinery purchased. Thus the money depreciation of his property may for a long time escape his notice, and in the meanwhile he does not take advantage of the reduction in his interest to provide against it. Again, a man who mortgages his house is apt to look upon it, if sufficient security at first, as continuing to be sufficient security (if he keeps it in repair and the character of the locality does not change). But, under the appreciating standard, his house is every year becoming smaller security; and, though he has the power, through the reduced interest he pays, to save up and add other security to his house, yet unless he is exceptionally well informed, he is likely not to do so. Many borrowers will simply be inclined to appropriate to themselves, as a piece of good fortune, the amount left to them by the reduction of interest, or will embark upon less remunerative enterprises, treating the reduction as if it were in commodity interest, and not merely in present payments to permit them to meet greater future claims. The lowered interest is deceptive, and will lure many to their loss. The appreciating standard demands of long-time borrowers a great deal of foresight and continence not demanded of them by the stable standard. Consequently, many will fail who would not fail under the stable standard.

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* June, 1896, p. 253.

But even if long-time borrowers possess this wisdom, there is a question whether they will be able to act in accordance with it. Is it possible for the owners of a factory, of a railroad, built more or less on borrowed capital, profitably to increase their business every year; or, not doing this, is it possible for them safely to invest their remitted interest every year in other people's enterprises,— especially when these others are subjected to the same necessity? It is evident that business conditions, even if this reduction of interest takes place, are oppressive; they force the long-time debtors, and all *entrepreneurs* using borrowed capital to increased business or to increased lending (with increased risks); and among them, perhaps, many will be led on to undertakings beyond their individual capacity. Thus, at best, the conditions are distressing to the wise; and, as we have seen, to the unwise, who perhaps constitute the majority, they are ruinous.

Then there is the case of long loans made by municipalities for definite purposes, say to build a reservoir, or by state governments, as to pay war expenses, where there can be no question about the government increasing its business, since it has no money-making business. What the government ought then to do would be to raise taxes sufficient not merely to pay the 3.96 per cent. money interest, but to cover 5 per cent. commodity interest; and it ought to save the difference, putting it out at the same interest, or buying up its own bonds at par, thereby forming a sinking fund against increasing the loan (in commodity). If it does not,— and it is not likely to do so,— it is practically increasing its debt every year without increasing its capacity to meet it, through its omission to tax sufficiently; although the appearance is all along that it is taxing sufficiently if it pays its expenses and the interest and forms the ordinary sinking fund for paying off the principal. It may be said that individuals in the state can save the amount spared them in the lowered taxes and put it into their business or out at interest. But will they? Some may; others certainly will not. The condition of the working of the corrective will not be fully observed.*

Thus the corrective does not practically succeed, even though it be practically applied,— that is, even though the rate of money interest does fall to the extent required. Whether this fall will take place is also a question, which may be examined under the second of the main questions.

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*The British debt of about six hundred and fifty millions of pounds was all in existence eighty years ago. If money had been appreciating since then 3 per cent. every year, this debt would now be equivalent to one of very nearly seven billions of the original pounds (things that then sold for a pound now selling for slightly less than two shillings). Can we believe that, the interest having been properly reduced, the British people would have saved and accumulated so much capital, and have found profitable employment for it, as to be able to support this debt as easily as they now do?

(2) Will the long-time creditor submit to the condition of foregoing some of his present interest in view of the future compensatory accumulation of his capital in commodity value, which will take place anyhow? The answer can only be inferential. He will probably accept some reduction, but not to the full extent demanded by the theory, and with greater shortcoming the greater the appreciation and consequent demand for reduction.

The capitalist, we should notice, is assured of so much commodity interest according as the standard is appreciating, even if he merely holds his money; while the borrower, by the mere fact of his agreeing to repay the same money principal, is already bound to pay that amount of interest. Under these circumstances the money-holder is plainly in a much better position relatively to the applicant than he is under the stable standard where no interest is assured him except what he bargains for. Now, there is one case where it is absolutely certain that the lender will demand, and, if borrowing takes place at all, will get, a higher rate of interest than the theory allows. If the normal rate of commodity interest were 3 per cent. and the appreciation of the standard also 3 per cent. a year, the corrective interest would be zero, and then the owners of capital would have no inducement to lend their money unless they were offered *some* rate of interest, which, whatever it be, must be above the proper corrective rate.* One may refuse to consider what would happen under such circumstances.† But the law of continuity demands that if a theory is correct it should not suddenly go to pieces before a supposition which differs only in degree from the ones in which it is claimed to hold. If we argue in conformity with this law from the certain case to others, we see that as here the conditions would lead to more than the proper rate of interest, so too they would when the reduction required is large, but to a less extent, and so finally even when it is small, though to a much smaller extent.

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* In the monograph on *Appreciation and Interest*, published by the American Economic Association (August, 1896), Professor Irving Fisher points out that owners of commodity, *e.g.*, wholesale dealers, in their trade with retailers, could afford to loan their wares for no money interest if they are depreciating in money value at about the same rate as is the normal rate of commodity interest (chap. vi.). But this applies only to such loans, and not even to the discounting of them. It does not apply to long loans, which are almost always of money or of claims to money.

† Professor Clark notices the possibility of such a situation and admits that then the fall in prices "could not be counteracted by changes in the rate of

This means that in practice the full corrective in the lowering of money interest would never be applied; and this means that, under the steadily appreciating standard, all debtors — among whom the long-time ones are already suffering under the oppressive need of perpetually increasing their business or their lendings in order to counteract their increasing borrowings — would not get the whole compensation which the theory promises.

To bring out more clearly still the difference between what happens under the appreciating standard and what happens under the stable standard, to show more plainly how the movement of the standard does affect the relationship between debtor and creditor in spite of the best corrective that can be offered by a change in the rate of interest, it may be well to notice briefly what would happen in the opposite case under a depreciating standard. Let us suppose, then, that, as before, the normal rate of commodity interest is 5 per cent., and that there is depreciation of money 1 per cent. annually. The proper rate of money interest as demanded by the theory would be 6.0606, say 6.06. A man borrows a hundred dollars, converts them into a hundred commodity units; these yield him at the end of the year, for interest-paying purpose, five commodity units; he has a total of 105, worth (at $1.0101 apiece) $106.06, pays $6.06 as interest, and has left $100 or 99 commodity units. These yield at the end of the second year 4.95 commodity units; he has a total of 103.95, worth (at $1.0203) $106.06, pays $6.06 as interest, and has left $100 or

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interest" (June, 1896, p. 258, note). But he seems to consider this abnormal and only temporary, as when a country is passing from a depreciated paper to a gold standard, and not deserving of further notice.

98.01 commodity units. And so on, his money capital remaining intact, his commodity capital diminishing by 1 per cent. every year. This means that the debtor can pay his interest and repay the principal even though his business decreases in volume; and, if he keeps it at the same volume, he will be a gainer thereby in spite of the increased interest. Of course, as shown by the theoretical working out of the matter, it is in this case the increased interest (the commodity interest is at the end of the first year 6 units, at the end of the second 5.93, and does not come down to 5, the normal rate, till about the nineteenth year), which causes the diminishing volume of business, just as, in the case of the loan under the appreciating standard, it was the decreased interest (also in commodity) which permitted increasing the volume of business. But, in actual practice, the borrower under the appreciating standard may not exert himself to increase the volume of his business, or, if he tries, may not succeed, and so may come to grief; while under the depreciating standard he will exert himself to keep up the volume of his business (for the sake of his own profit), and so will be led to economize at first; and he will find himself a gainer in the end. And, even if he does not succeed, he will not suffer loss, provided the volume of his business does not decrease by more than 1 per cent. a year. All this on the supposition that the theoretically demanded money interest obtains. On this supposition it is apparent that the *entrepreneur* who borrows under the appreciating standard has an easier time of it at first if he omits to observe the conditions imposed upon him, with loss showing itself later; but under the depreciating standard the borrowing *entrepreneur* necessarily has a harder time of it at first, with prospect and likelihood of easier times ahead. This would lead to the inference that under an appreciating standard there would at first be a rush into various enterprises of borrowers desirous of taking advantage of the low rate of interest, but after a while the disasters of these would discourage others; while under the depreciating standard *entrepreneurs* would at first hold aloof from borrowing, but after a while, perceiving the success of those who have ventured, would more and more enter the lists. But this, it must be remembered, is only on the supposition that the theoretically demanded money interest is actually ruling in the market. On this supposition again it is apparent that, under the depreciating standard, the creditor is every year having his capital repaid him in the excess of interest, by what the French call *amortissement;* so that his investment is every year diminishing (in commodity). Hence there is justice also here, although the repayment is made in money worth less than was lent. If he is wise, he will not spend this extra payment as if it were income, as though the rate of commodity interest had risen, but will regard it as capital and reinvest it. If he is not wise, the dwindling of his capital (in commodity value) is due to his spending it, and is his own fault.

Thus the relationship between the debtor and creditor is under the depreciating standard the reverse of what it is under the appreciating standard. Under the appreciating standard the borrower is left with the option of saving or not, and if unwary or if not permitted by circumstances, will not, and will suffer; while, if the theory be carried out, the creditor is compelled to save and to accumulate, the reinvestments being made for him by his debtors. Under the depreciating standard, however, the option lies with the creditor, who may spend or not what is thus returned to him of his commodity capital, and, if unwary, will consume his capital and will suffer; while the debtor, if the theory is carried out, is compelled to pay back the loan partly every year in addition to the (normal) interest, and therefore is every year being freed from his debt (in commodity, although still owing the same money amount).* Under the appreciating standard the debtor has to form the peculiar sinking fund against the increase of his debt; but under the depreciating standard it is the creditor who has to form a similar sort of sinking fund against the decrease of his investment. Thus the appreciating standard throws the extra need of caution and the extra trouble of increasing one's business or investments upon the debtor, and all the hitches which in actual practice must occur are inconveniences to him; while the depreciating standard throws the extra caution and the extra trouble of reinvesting upon the creditor, and all the hitches in actual practice are to his inconvenience. That the one of these standards is favorable to debtors, the other to creditors, is evident, and this even on the supposition that the theory of corrected rate of interest is complied with.

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* Thus the depreciating standard of itself forces the borrower to do exactly what a good Mentor would advise all borrowers to do.

But we have seen in the case of the steadily appreciating standard that the rate of interest is not likely to be fully adjusted. The same probability exists in the case of the depreciating standard; for here it is the holder of money who is at a disadvantage in the bargaining for interest, as he is bound to lose unless he invests his money. This means, in the light of theoretical correctness, that the debtor is likely under the appreciating standard to pay too much, and under the depreciating standard to pay too little. Hence, it might be said that injustice is done to the debtor in the one case, and in the other to the creditor. But it is well not to speak of injustice where contracts are to be performed that have been entered into by responsible men with their eyes open.* The true way of looking at the matter is to state that the economic conditions are different under the two standards,— that under the steadily appreciating standard they are such that the rate of commodity interest (including the final repayment) is apt to be higher, and that under the steadily depreciating standard they are such that the rate of commodity interest (including the final repayment) is apt to be lower, than would be the rate of interest under the stable standard, other things being the same. The rate of interest under the stable standard is best because under it people see exactly what they are doing and that is done which they intended. But under each of the other standards things are demanded that are not demanded under the stable standard; and people do not as a rule see what they are doing, and what takes place is different from what they expected.† They are both of them bad standards, therefore; but of the two the appreciating is better for creditors and the depreciating better for debtors.

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* The case is different where, *after* the contract, there is a change in the movement of the value of the standard.

† It is true that under the stable standard there are variations in the prices of single articles, and manufacturers and merchants mostly deal in a few articles. But these variations exist also under the other standards, and have added to them the additional variation due to the change in the value of the monetary standard.

This conclusion, it should be borne in mind, is reached *both* on the supposition that the theory of altered interest is fully carried out, *and* on the supposition, which has greater probability for it, that it will not be carried out, in actual practice.

There is only one corrective that would perfectly restore under the appreciating or depreciating standards, however steady they be, the same conditions as under the stable standard. This is the making of loans so that the interest every year, and at the end the capital, should be paid in sums reduced or increased proportionately to the appreciation or to the depreciation of the money. This is the system aimed at by the advocates of the multiple standard, whose plan, too, would equally counteract fluctuations in appreciation or depreciation, and would also apply to salaries and to rent, to which Professor Clark's theory makes no pretence of being applicable. This is not a natural and automatic system, but most essentially an artificial one. Professor Clark offers his theory as showing the superfluousness of that artificial system; for his theory claims that a corrective at least against *steady* appreciation and against *steady* depreciation already exists and is naturally and automatically applied.

The present criticism is offered to show that the corrective which Professor Clark regards as satisfactory against the evils of a steadily appreciating standard would only be partially applied, and, even if wholly applied, would not by any means be a satisfactory corrective. If, then, we have at present an appreciating standard, even though it were one steadily appreciating, the conclusion would seem to be that we must either apply the multiple-standard system or do something (with risk of other ills) to prevent the appreciation, or suffer bad consequences. We must not flatter ourselves with the optimistic view that a natural corrective exists, and is already operating or about to operate.

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